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BUREAU OF SHIPS GROUP 1

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ATOMIC ENERGY

366746

TECHNICAL INSPECTION REPORT

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Classification (Cancelled) (Changed to Security Information)
By Authority of JOINT CHIEFS OF STAFF JCS 1795/38 DATED 20 APRIL 1949
By John H. Cuyette Date 24 SEP 1953

U.S.S. CARLISLE (APA 69)

TEST ABLE

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OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL

JOINT TASK FORCE ONE

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REG. NO. 6944

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GROUP 3
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BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

U. S. GOVERNMENT
FROM BUREAU

Support Agency
D. O. 20301

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APPROVED:

F. X. Forest,
Captain, U.S.N.

USS CARLISLE (APA69)

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OPERATION CROSSROADS. U.S.S. CARLISE (APA69)
TEST ABLE [U].

Bureau of Ships Group technical inspection rept.

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USS CARLISLE (APA69)

U.S.S. CARLISLE (APA 69)

SHIP CHARACTERISTICS

Building Yard: Consolidated Steel Corp.; Wilmington,
California.

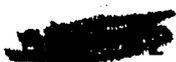
Commissioned: 29 November 1944.

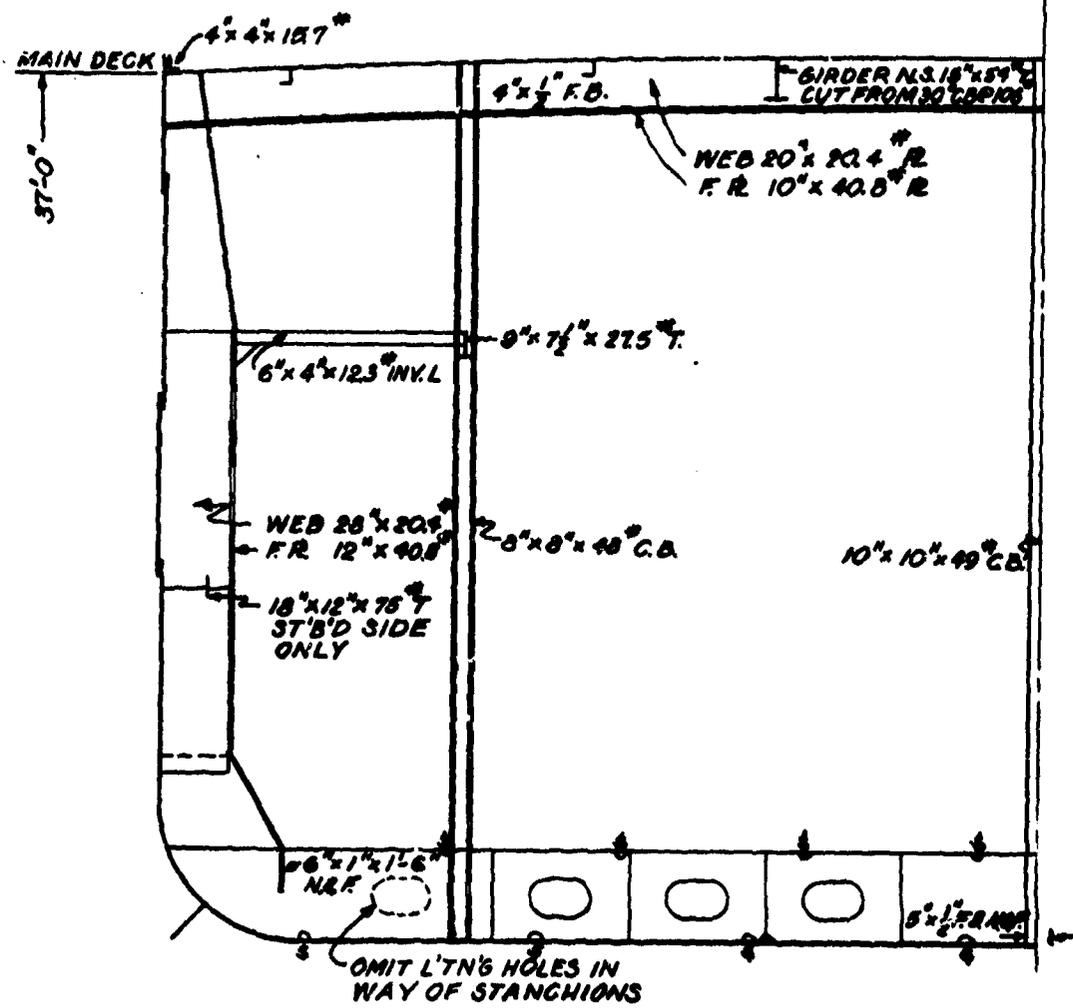
HULL

Length Overall: 426 feet 0 inches.
Length on Waterline: 400 feet 0 inches.
Beam (extreme): 58 feet 0 inches.
Depth (molded to upper deck): 37 feet 0 inches.
Drafts at time of test: Fwd. 9 feet 0 inches.
Aft. 17 feet 0 inches.
Limiting displacement: 7,080 tons.
Displacement at time of test: 5,598 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of Westinghouse steam turbines
directly connected to Westinghouse main generators. Two
main shaft motors.
Main Condensers: Two are installed in ship.
Boilers: Two Babcock and Wilcox boilers are installed
in ship. 450 psi gauge, 750° F.
Propellers: Two are installed.
Main Shafts: Two are installed in ship.
Ships Service Generators: Five are installed in ship.
Two - 250 KW. - 450 V. - A.C.
One - 150 KW. - 450 V. - A.C.
Two - 100 KW. - 120/240 V. - D.C.

 USS CARLISLE (APA69)



FRAME 76 LOOKING AFT

TEST A

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

The CARLISLE was sunk. The exact time of her sinking is not known, but it is known that she disappeared sometime between 0910 (See photo on Page 13) and 0940, the arrival time of the Technical Observer in PBM Charlie over the lagoon, when the CARLISLE was first reported by observer to be missing.

The maximum list photographed of the CARLISLE is shown in the photo on Page 13. This list is estimated to be about 10° starboard. Since divers report the starboard side of the ship apparently intact as viewed from the bottom, this list is considered to have been caused by the general displacement of topside structure to starboard by the blast. It is believed that this list materially delayed the sinking of the CARLISLE by raising the larger holes in the port shell plating above the waterline.

Sources of flooding are probably the holes in port shell plating.

(b) Structural Damage.

The port side of the CARLISLE which was the side exposed to the air burst was damaged extensively. Two large holes were blown in the port shell plating and there was a general displacement to starboard of topside structure.

From the bcwto frame 20 port there is little evidence of damage. From frame 20 to 27, slight transverse buckles are apparent in the upper deck plating. From frame 27 to frame 60, the port side shell plating from a few feet above the turn of the bilge to the upper deck is blown into the ship. Below this hole, the shell

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USS CARLISLE (APA69)

plating is dished between frames but is without visible rupture. At frame 30 above this hole, the upper deck has been ripped loose from the shell plating and doubled back on itself until the set of bits on the deck edge are overhead and upside down. The deck is pushed up several feet on the port side and is generally buckled to the centerline. Near the foremast, there is a tear in the upper deck which runs inboard 6 or 8 feet from the port deck edge.

A second and similar break in the port shell plating exists between frames 95 and 120. Between the two large breaks and aft to about frame 130, considerable horizontal buckling of the side is present but with no ruptures being noticed by the divers. From frame 130 aft there is no visible damage.

The starboard side of the ship is apparently intact as viewed from the bottom of the lagoon. There is a considerable amount of wreckage on the bottom along this side. Winches, gun tubs, ammunition ready service boxes, boat davits, boat propellers and rigging are among the ship's components recognized in this wreckage (see photo on Page 19). The upper deck and superstructure deck on the starboard side are apparently intact. The ladders and passageways on this side were used by the divers for access (see photo on Page 14). The deck machinery between the forward bulkhead of the bridge and foremast is missing. The foremast is standing but the topmast is broken and hanging to starboard. (See photo on Page 12). The 15 ton boom is buckled in the center. The 5 ton boom is apparently intact. The weather deck port side frame 10 to 60 is buckled and pushed up several feet at the edge. The port side of the superstructure is badly mangled, the decks in this area being impassable to divers. The stacks are sheared off and not visible. Aft on the port side, conditions are similar to those forward. Aft of frame 130 port the upper deck drops away and is impassable to divers. The mainmast and deck-house aft are uprooted and lying over the starboard side of the ship.

The forward 40MM gun tubs are intact but the starboard gun is missing. Around the stern a number of 5" projectiles and powder cases were strewn about the bottom of the lagoon.

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(c) Other damage.

Machinery and electrical damage was unobserved.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Unobserved. Painted frame numbers are visible on the starboard side of the ship.

(b) Fires and explosions.

The CARLISLE was burning continuously from the first time she came into view until she sank. (See photo on Page 11) No explosions were noted.

(c) Shock.

The air blast is considered to have caused a general displacement of topside superstructure to starboard.

In addition to local damage, it was noted that the ship itself was blown sideways about 150 feet.

(d) Pressure.

Unobserved.

III. Results of Test on Target.

(a) Effect on propulsion and ship control.

Unobserved.

(b) Effect on gunnery and fire control.

The forward starboard 40MM guns are missing. No further information is available.

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(c) Effect on watertight integrity and stability.

Complete loss of watertight integrity.

(d) Effect on personnel and habitability.

Unknown prior to sinking.

(e) Total effect on fighting efficiency.

Complete loss.

IV. General Summary of Observer's Impressions and Conclusions.

Photographs of the burst taken from towers and planes, after burst photographs of the array from PBM Charlie, the reports of the technical observer in PBM Charlie, the underwater photographs, the Bureau of Ships Interim Report, and the divers' report are the total available sources of information. A study of this material has been made and although certain details were unobtainable, the results are compiled here in an attempt to give the story of the ship from the time of bomb burst to the time of sinking.

The CARLISLE was first seen in photographs at 0902:02. At that time she was smoking heavily amidships on the port side with both stacks missing and the mainmast unidentifiable. (photo on Page 11) shows the CARLISLE at 0902:52 from the air. She continued to burn and by burst plus 5 minutes 33 seconds she had assumed a 10 degree list to starboard as shown in photo on Page 12. (The sheer of the bow seems sharper than normal. This observation agrees with the divers report of heavy shell damage from frames 27 to 60). The photo on Page 13, shows the listing CARLISLE at burst plus 9 minutes 15 seconds. Her broken mainmast can be seen lying on the deck.

There are no photographs showing the sinking of the CARLISLE. The last burst picture at approximately 0910, show the CARLISLE listing and still burning. When PBM Charlie arrived over the lagoon at 0940 she had disappeared.

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The CARLISLE was found in about 170 feet of water and with a small list of about 5 degrees to port. The underwater photographs (photo on Pages 14 thru 21) show none of the major structural damage reported by the divers. The sketch on Page 22 has been sketched from their reports.

V. Preliminary Recommendations.

None.

VI. Pre-test Statistics.

(a) Instructions for loading the vessel specified the following:

ITEM	LOADING
Fuel Oil	95%
Diesel Oil	95%
Ammunition	100% of normal allowance plus several loaded but plugged bombs, rocket heads and incendiary clusters throughout the ship. The Bureau of Aeronautics secured a VF airplane aft on the upper deck.
Potable and Reserve Feed Water	95%
Salt Water Ballast	None

Details of the actual quantities of the various items aboard are included in Report No. 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

The CARLISLE at time of burst floated at drafts of 9' 0" forward and 17' 0" aft. She had no list.

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PHOTOGRAPHS

TEST ABLE

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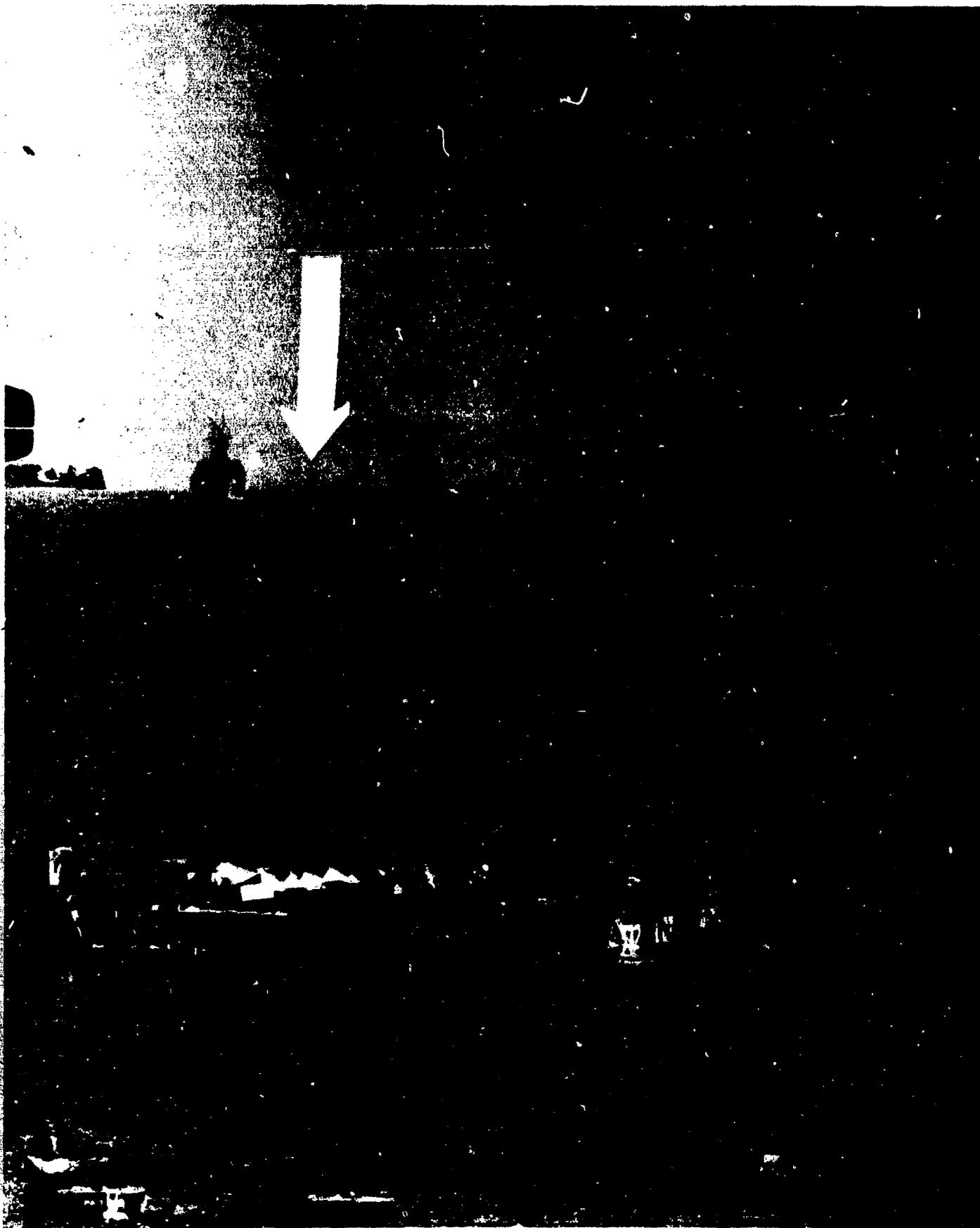
DA-CR-PBM2-47-1 July 46 (-11) F56-20 Obl 12000 P. Pt secret. Print 51.
Clock time 0902: 52. Carlisle burning. Clock time 0902: 52. Fire first
visible at clock time of 0902: 01.

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DA-CR-T3A-31-79/(-11) 1 July 1946/40'' Bikini/secret. Print 111. Upper deck area of CARLISLE between foremast and forward side of island superstructure appears smashed down. This crushing appears to accentuate sheer of bow. Picture taken 5 minutes 33 seconds after burst. BRACKEN in foreground.

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DA-CR-T3A-31-79/(-11) 1 July 1946/40"/Bikini/Secret. Print #183.
Last picture of CARLISLE before sinking, taken from Enyu 9 minutes
15 seconds after burst. Fore topmast and mainmast have toppled over
to starboard.

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CR5-S20-1. (Underwater). View looking forward on CARLISLE's upper deck at frame 110, starboard. Ladder to superstructure deck intact and rail bent slightly.

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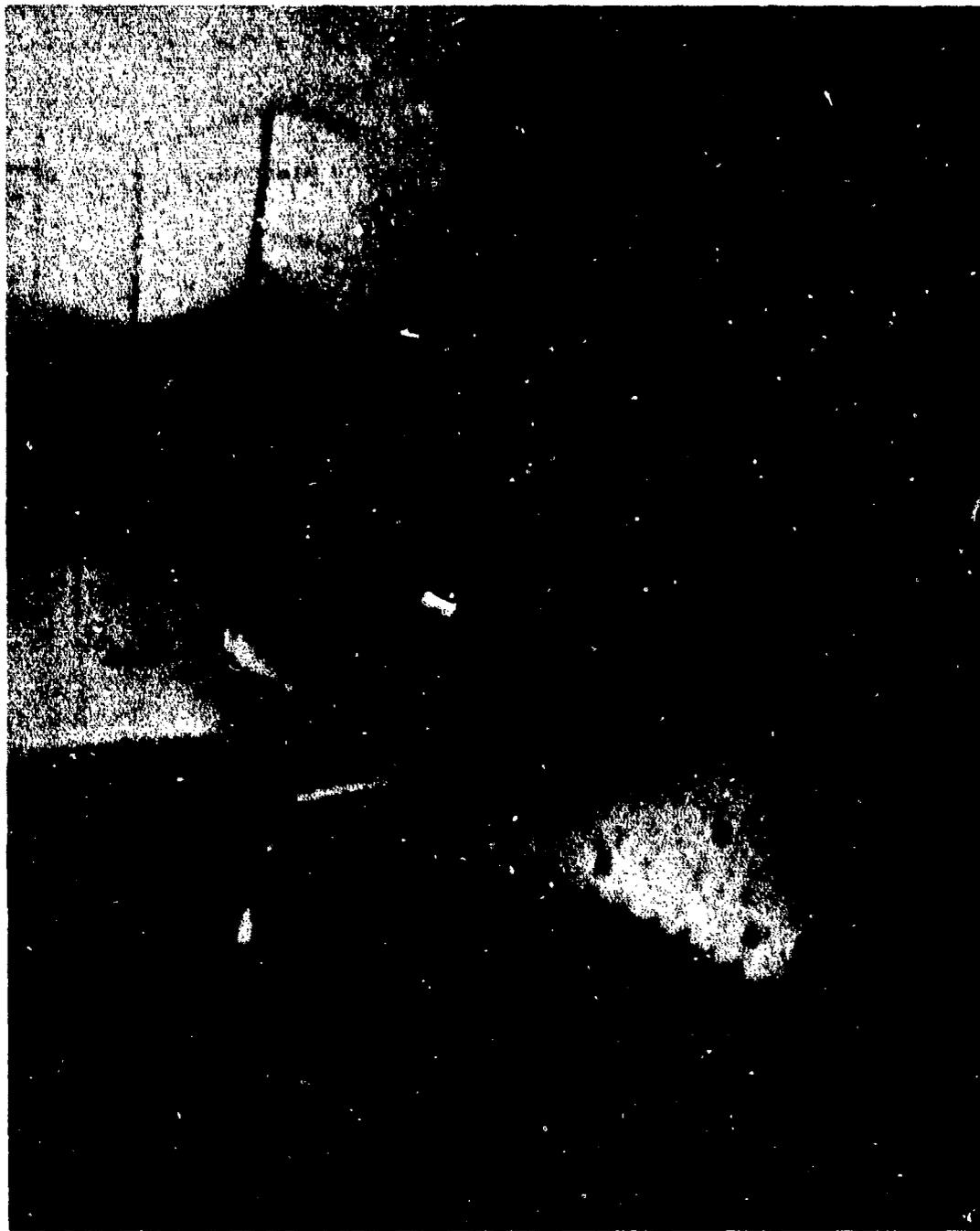
CR5-S-20-8 (Underwater). View of CARLISLE's navigating deck house, frame 100, starboard. Note hose stowage in foreground and crumbled structure, probably the after stack, at top of picture.

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CR5-S21-7 (Underwater). CARLISLE's wrecked boat davit in foreground. Note deranged strongback and davit head. Portion of life rail connecting to 20 MM gun tub missing on top of house. Picture taken on superstructure deck, frame 85, starboard.

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CR5-S21-11 (Underwater). After end of boat davit strongbacks shown free of journal of toppled davit head. Underwater picture taken on CARLISLE's superstructure deck, frame 100, starboard.

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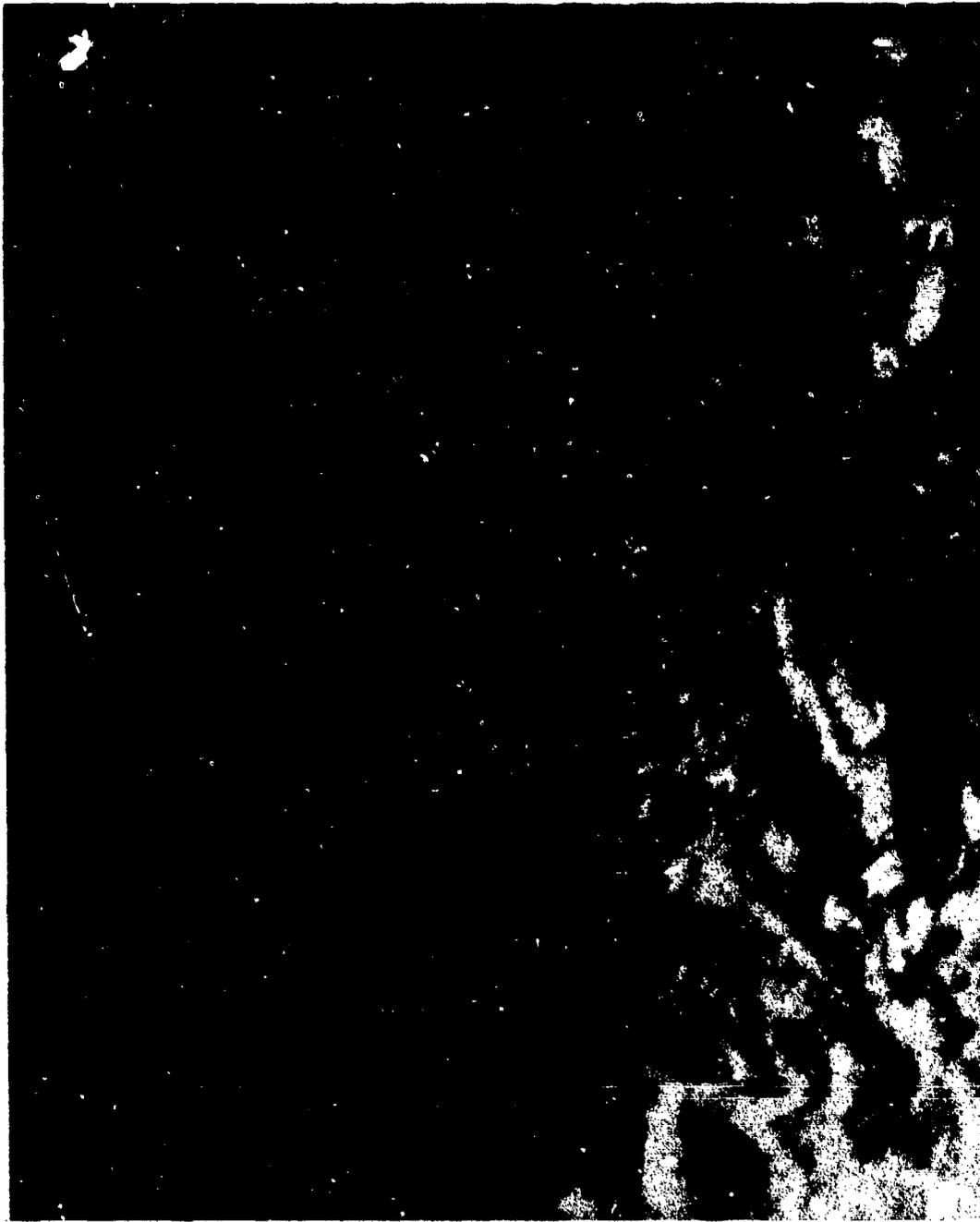
CR5-S-24-1 (Underwater). View of torn shell plating on starboard side of CARLISLE. Rivets have been sheared off.

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CR5-S24-5 (Underwater). Set of bitts and other gear blown from CARLISLE by air burst.

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CR5-S24-22 (Underwater). View of starboard elevation of CARLISLE's stern showing ship in nearly upright position.

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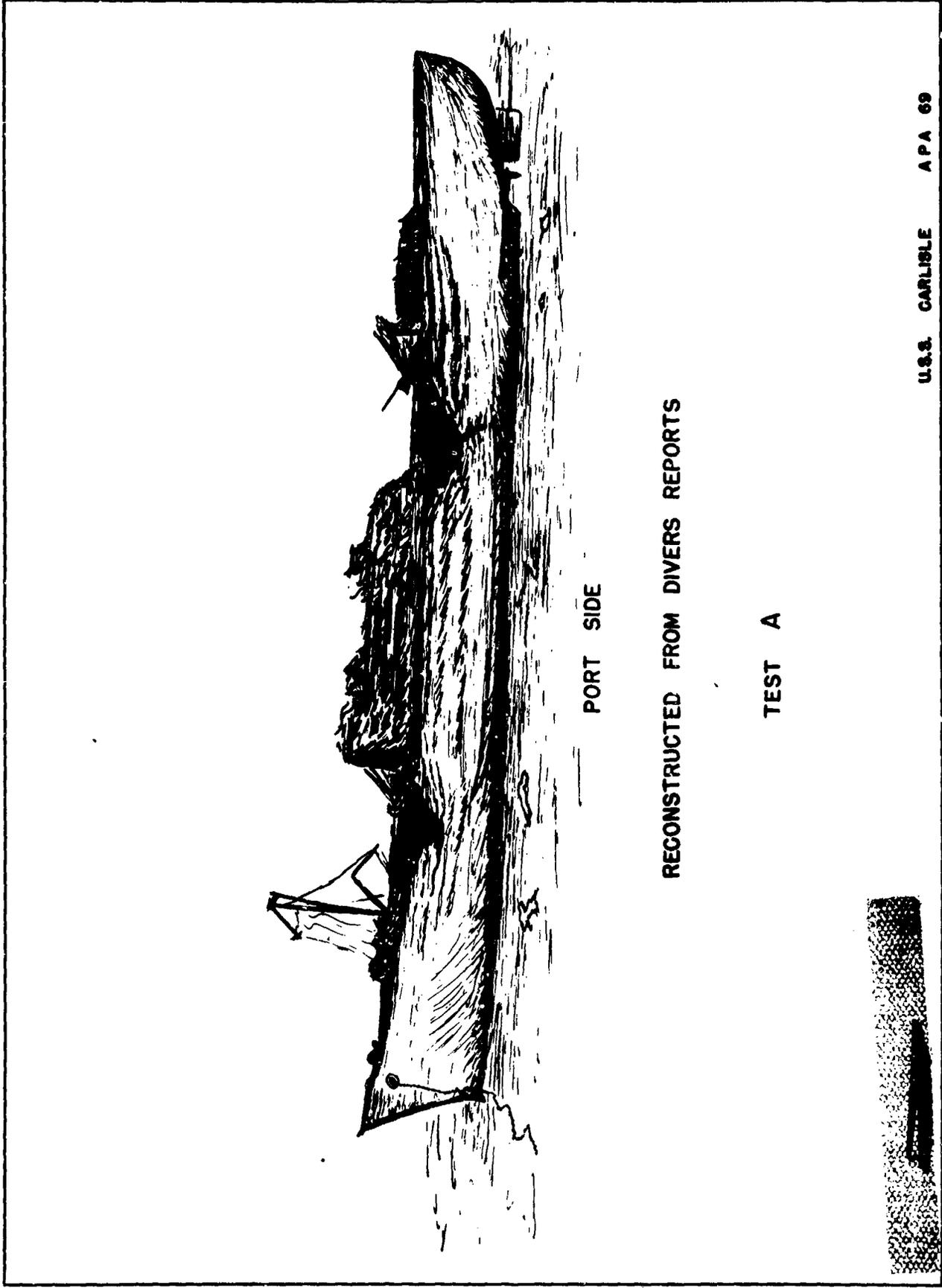
CR5-S25-26. (Underwater). Strainer near frame 60 on port side of
CARLISLE. Note identification of plate above strainer.

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PORT SIDE

RECONSTRUCTED FROM DIVERS REPORTS

TEST A



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Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

9 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency (formerly Defense Nuclear Agency) Security Office has reviewed and declassified the following reports:

+ ST-A

AD-366748 -	XRD-65
AD-366747 ~	XRD-64
AD-366746 ^	XRD-63
AD-376826 ~	XRD-60
AD-376824 ~	XRD-58
AD-376825 ~	XRD-59
AD-376823 ~	XRD-57
AD-376822 ~	XRD-56
AD-376821 ~	XRD-55
AD-366743 ~	XRD-54
AD-376820 ~	XRD-53
AD-366742 ~	XRD-52
AD-366741 ~	XRD-51
AD-366740 ~	XRD-50-Volume-2
AD-366739 -	XRD-49-Volume-1
AD-366738 -	XRD-48
AD-366737 ^	XRD-47

TRC

9 April 1997

SUBJECT: Declassification of Reports

AD-366736 -	XRD-46
AD-366735 -	XRD-45
AD-366723 -	XRD-37
AD-366721 -	XRD-35
AD-366717 -	XRD-31-Volume-2
AD-366716 -	XRD-30-Volume-1
AD-366751 -	XRD-68-Volume-2
AD-366750 -	XRD-67-Volume-1
AD-366752 -	XRD-69
AD-366744 -	XRD-61.

All of the cited reports are now **approved for public release**. Distribution statement "A" now applies.

Arduith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center

*Completed
1 mar 2000
B.W.*